

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/EP2004/002254

International filing date (day/month/year)
05.03.2004

Priority date (day/month/year)
03.04.2003

International Patent Classification (IPC) or both national classification and IPC
C04B24/26, C04B24/32

Applicant
CONSTRUCTION RESEARCH & TECHNOLOGY GMBH

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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JC12 Rec'd PCT/PTC 29 SEP 2005

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**International application No.
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Box No. I Basis of the opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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Box No. II Priority

1. ☒ The following document has not been furnished:

- ☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).
- ☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

Box No. IV Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees, the applicant has:
- ☐ paid additional fees.
 - ☐ paid additional fees under protest.
 - ☒ not paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
- ☐ complied with
 - ☒ not complied with for the following reasons:
see separate sheet
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☐ all parts.
 - ☒ the parts relating to claims Nos. 1-13 partially

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Box No. V Reasoned statement under Rule 43b/s.1(a)(I) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1,2,8
Inventive step (IS)	Yes: Claims	
	No: Claims	1-13
Industrial applicability (IA)	Yes: Claims	1-13
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item IV

Lack of unity of invention

1) The Examining Division agrees with the objection put forward by the Search Division as to lack of unity, the reasons for the objection being as follows.

The following groups of invention were identified:

1.0) Group I: a cement additive containing copolymers comprising a unit of formula A, an acid unit of formula B and an acrylate unit of formula C.

1.1) Group II: a cement additive containing copolymers comprising a unit of formula A, a maleic anhydride unit of formula B and an acrylate unit of formula C.

1.2) Group III: a cement additive containing copolymers comprising a unit of formula A, a maleic imide unit of formula B and an acrylate unit of formula C.

1.3) Group IV: a cement additive containing copolymers comprising a unit of formula A, an acid unit or a maleic anhydride or imide unit of formula B and an acrylamide unit of formula C.

1.4) A common technical feature among these groups of inventions could be identified, namely a cement additive containing copolymers comprising a unit of formula A, a unit having at least one carbonyl functional group and a third unit having one carbonyl functional group.

1.5) Additives for cement and comprising copolymers having the above identified common technical feature are known in the art (see for example WO0158579, example 6 on page 32 and 3 on page 30).

1.6) Therefore this common technical feature does not contribute over the state of the art and thus it cannot be regarded as a special technical feature within the meaning of Rule 13.2 PCT and therefore the three groups of inventions are not so linked as to form a single general inventive concept (Rule 13.1 PCT).

1.7) A further common feature could be individuate among groups I and II, namely the third unit has a carboxylic moiety. However this is also known in the art (see the same reference of paragraph 1.5 above) and therefore the same reasoning of paragraph 1.6 above applies.

1.8) A further common feature could be individuate among groups II, III and IV namely the second unit has a maleic moiety. However this is also known in the art (see claim 1 of DE19926611 with monomers Ia, Ic with $n=0$ and monomer II) and therefore the same reasoning of paragraph 1.6 above applies.

1.9) A further common feature could be individuate among groups III and IV namely the second unit is maleic imide. However this is also known in the art (see claim 1 of DE19926611 with monomer Ia with $n=0$, Ic with $Y=NR_2$ and monomer II). Therefore the same reasoning of paragraph 1.6 above applies.

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following documents:

- D1: WO 02/096823 A (NIPPON CATALYTIC CHEM IND ;YAMASHITA AKIHIKO (JP); HIRATA TSUYOSHI) 5 December 2002 (2002-12-05)
- D2: EP-A-1 052 232 (TAIHEIYO CEMENT CORP) 15 November 2000 (2000-11-15)
- D3: WO 01/58579 A (TSUZUKI TOSHITAKA ;MIYATA AKITAKA (JP); NARUSE SHIHO (JP); NAT STA) 16 August 2001 (2001-08-16)
- D4: DE 199 26 611 A (SUEDEDEUTSCHE KALKSTICKSTOFF) 14 December 2000 (2000-12-14)

2) The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of at least claim 1 is not new in the sense of Article 33(2) PCT.

2.1) The document D1 discloses a cement additive (see abstract and claim 2) containing a polymer (see table 1 in page 89 and production examples 4-6) comprising a constitutional unit of formula A with 25 ethylene oxide units, a constitutional unit of formula B (acid) and a constitutional unit of formula C with A being oxygen. The additive further comprise a polymer (see claim 2) falling under the scope of claim 8 of the present application.

Therefore the subject matter of claims 1 and 8 is not novel over D1.

2.2) The document D2 discloses a cement additive (see abstract) containing a polymer (see table 1 example C in page 12) comprising a constitutional unit of formula A (methoxy-PEG (8 ethylene oxide units) monoallyl ether), a constitutional unit of formula B (Na methacrylate wherein the presence of sodium or hydrogen is only dependent on the basic or acid environment) and a constitutional unit of formula C (methyl methacrylate) and having a molecular weight of 5600.

Therefore the subject matter of claims 1 and 2 is not novel over D2.

2.3) The document D3 discloses a cement additive (see example 6 on page 32 and 3 on page 30) containing a polymer comprising a constitutional unit of formula A (polyethylene oxide monoallylether with 16 ethylene oxide units), a constitutional unit of formula B (acrylic acid) and a constitutional unit of formula C (methacryloxyethyl ammonium chloride).

Therefore claim 1 is regarded as not being novel over D3.

3.1) In view of the fact that:

3.1.1) the applicant compares the subject matter of the present application with a state of the art where no additive at all is present or where an additive of only A and B is present;

3.1.2) the additive of claim 12 of the present application are common in the art;

3.1.3) the ranges claimed in claims 3-7, 9-11 are to such an extent unclear that a man skilled in the art would be prevented to perform the invention;

3.2) Therefore it is not at present apparent which part of the application could serve as a basis for a new, allowable claim. Should the applicant nevertheless regard some particular matter as patentable, an independent claim should be filed. The applicant should also indicate in the letter of reply the difference of the subject-matter of the new claim vis-à-vis the state of the art and the significance thereof.

Re Item VIII

Clarity

4) See paragraph 3.1.3 above.

Further Remarks

5) In order to facilitate the examination of the conformity of the amended application with the requirements of Article 34(2)(b) PCT, the applicant is requested to clearly

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AUTHORITY (SEPARATE SHEET)**

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identify the amendments carried out, no matter whether they concern amendments by addition, replacement or deletion, and to indicate the passages of the application as filed on which these amendments are based (see also Rule 66.8(a) PCT).
If the applicant regards it as appropriate these indications could be submitted in handwritten form on a copy of the relevant parts of the application as filed.